

 GOVERNMENT OF DUBAI	Organization/Unit:	إدارة مختبر دبي المركزي Dubai Central Laboratory Department	الوحدة التنظيمية:	 بلدية دبي Dubai Municipality
	Document Title:	Certification of Reinforcing Steel Bars as per BS 4449: 2005 + A3 2016	عنوان الوثيقة:	
	Doc Ref.	DM-DCLD-RD-DP21-2129 (IC)	رقم الوثيقة :	

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Issue Date	Rev. No.	Summary Of Amendments
05-07-2006	0	First draft for comments
18-07-2006	0	Final draft
30-07-2006	1	Issue for use
19-03-2008	2	Re issue to include no. of samples and minimum required equipment
17-4-2008	3	Re issue to modify clause 8.1.2.2 independent testing plan; change the frequency of testing for chemical analysis from once a year to every three months
12-05-2008	4	Re issue to be consistent with the other specific rules for steel bars
20-05-2008	5	Re issue to modify clause 7.3.2.2; changes in table in clause 8.1.2.2
16-08-2009	6	Document reference number and format is changed according to the new IMS, statement for the independent testing plan was changed, and the statement for surveillance was shortened by referring the appropriate procedure, RD-DP21-2096 (IC).
05-05-2010	7	Re issue to modify clause 7.1.3; change the number of samples for testing from 15 to 10 pieces
14-07-2016	8	Reviewed with the requirements of the current version of the standard (BS 4449:2005 + A3:2016) and found to be still suitable. Also revised based on the new format of documentation and renaming of the section.
10-03-2019	9	Updated the format as per new DM template and new DM logo
04-08-2020	10	Add the options for initial audit by the approved CAB and remotely by PCAS. Adding definition for authorized auditor. Update for the new numbering system and followed terminologies. Add provision for accepting valid test reports. Change font Type. Correction of numbering
26-09-2021	11	Removal of the documents in clause 2.1.2, in addition to further amendment in the provision for accepting valid test reports (clause 2.4.2.6), in line with DM 30% reduction of requirements (both service and specialized). Modifications in the auditing part for the factories already certified against ISO 9001 to opt for auditing only the areas of production and monitoring stages of product realization, quality control and final product testing and evaluation.
04-10-2022	12	Changing section name as per the new organizational structure, and replace HOU by CQPSM (Section's Manager), PCAS by CQPS (Certification and Quality Control of Products Section).
27-03-2023	13	Full re-structuring and transfer of common provisions to the general rule. Clauses are re-numbered and document title has been revised accordingly. Use of New DM Logo

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1. INTRODUCTION

- 1.1 This document prescribes the specific rule for certification of the product(s) as identified herein, in accordance with the requirements of DM Third Party Product Certification Scheme Through Factory Assessment, taking into consideration the applicable normative references and standard specification, in addition to the requirements for conformity evaluation, as stated below.
- 1.2 The applicant/client shall comply with this specific rule, and to all provisions under the “**General Rule for DM Third Party Product Certification Scheme Through Factory Assessment**”**DM-DCLD-RD-DP21-2001 (IC)**.
- 1.3 This specific rule **is an integral part of the general rule** and both shall always be read together.

2. SCOPE

- 2.1 These specific rules cover the requirements for ribbed weldable reinforcing steel used for the reinforcement of concrete structures. Steel delivered in the form of bars, coils and decoiled products are covered by this document. It covers three steel grades, all of 500 MPa characteristic yield strength, but with different ductility requirements. The three grades are B500A, B500B, and B500C
- 2.2 This specific rule does not -by itself- permit the use of the below product in the construction sites. However, it does provide the necessary general conformity assessment criteria, which are required for the evaluation and issuance of the certification and the authorization of the use of the DCLD Conformity Mark. Other relevant requirements issued by the regulatory bodies if any; shall always be fulfilled.

3 PRODUCT IDENTIFICATION AND APPLICABLE STANDARD/NORMATIVE REFERENCE

- 3.1 Product name: Steel for the reinforcement of concrete-Weldable reinforcing steel – Bar, coil and decoiled product
- 3.2 Applicable standard/Normative reference: BS 4449:2005 + A3:2016 - Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product - Specification
- 3.3 Additional reference:
ISO 9001 Quality Management System – Requirements
ISO 19011 Guidelines for Auditing Management Systems

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4 DEFINITION OF TERMS

4.1 In addition to the definitions given in BS 4449:2005 and the General Rule of the scheme [DM-DCLD-RD-DP21-2001 (IC)], the following shall apply:-

4.1.1 Standard Specification – BS 4449:2005 + A3:2016 - Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product - Specification

5 REQUIREMENTS FOR INITIAL CERTIFICATION

5.1 The process of application, initial assessment and product sampling shall be in line with the related provisions in the general rule and the standard specifications.

5.2 The factory shall have a laboratory with the following testing equipment as a minimum:

- Calipers and other linear measuring test equipment's
- Weighing Scale (with an accuracy of 100 grams)
- Chemical Analyzer
- Tensile Test Equipment
- Bend Test Equipment

5.3 Bar Marking Requirements

The manufacturer of reinforcing steel bars and coils shall submit to Dubai Central Laboratory Department – Certification And Quality Control Of Products Section – (DCLD-CQPS) a unique bar marking requirements of their products for approval. The approved mark shall be applied to the products covered by the certification.

Product Marking shall be as per the Rules on the Markings and Tags of Steel Bars, DM-DCLD-RD-DP21- 2091 (IC).

The bars shall be rolled from properly identified heats of mold-cast or strand-cast steel. The steel shall be made by any commercially accepted process what do we mean by commercially accepted process.

5.4 Product Evaluation and testing

5.4.1 Chemical Composition

The chemical composition shall be based on clause 7.1 of the Standard Specification. The values of individual elements and the carbon equivalent shall not exceed the limits given in Table 2 of the Standard Specification. All other intentionally added elements except those included within the carbon equivalent formula, shall be below the limit values specified in Table 1 of BS EN 10020.

5.4.2 Mechanical Properties

Note: All bars shall be free from defects such as seams, porosity, segregation and metallic inclusions, which can adversely affect the mechanical properties.

5.4.2.1 Tensile properties of the bars shall comply with the characteristic values specified in Table 4 of Standard

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Specification.

- 5.4.2.2 Fatigue strength shall comply with clause 7.2.4 of the standard specification. However, previously carried out Fatigue Tests by Independent Testing Laboratory may be accepted by DCLD-CQPS, if available. It shall show that reinforcing bars, coils and decoiled products shall endure 5 x 10 to the 6th power cycles of stress.
- 5.4.2.3 Bend Performance as per 7.2.5 of the Standard Specification shall show no sign of fractures or cracks visible to a person of normal or corrected vision.
- 5.4.2.4 Dimensions, mass per meter and tolerances shall comply with the requirements as specified in section 7.3 of the Standard Specification.
- 5.4.2.5 Bond Strength/ Surface Geometry of the bars shall comply with the requirements specified in section 7.4 of the Standard Specification.

5.4.3 Number of Samples for testing shall be at least 10 pieces by one meter length per size within the size range per grade.

5.4.4 The results of testing must meet the requirements as per the standard specification.

6 GRANTING OF THE DCLD CERTIFICATION

- 6.1 The DCLD product conformity certificate and the authorization to use the DCLD conformity mark shall be granted upon conformance with all related provisions in the general rule.
- 6.2 Fees shall be as per DM-DCLD-RD-DP21-2092 (IC) and other relevant provisions in the general rule.
- 6.3 DCLD-CQPS shall carry out surveillance of certified clients based on the approved periodic plans and related provisions in the general rule.
- 6.4 Appeals, disputes and complaints shall be in line with the relevant provisions in the General Rule.

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